

[MONTHLY SERVICE BULLETIN
(WESTERN AUSTRALIA FISHERIES

3(10) Oct 1954

DEPARTMENT OF PARKS AND WILDLIFE

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FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

Vol. III, No. 10.

October 1, 1954

STAFF NOTES

The Clerk in Charge, Mr. B.R. Saville, and the Supervising Inspector, Mr. J.E. Bramley, will attend a meeting with representatives of the Mandurah Licensed Fishermen's Association at the Mandurah Road Board office on Friday October 1.

The Superintendent, Mr. A.J. Fraser, recommenced work, after annual leave, on September 20.

Inspectors W. Davidson and J.C. Thair resumed after annual leave on September 22 and 27 respectively.

Inspector S.W. Bowler plans to start his annual leave on October 1 and Technical Officer J.S. Simpson commences one week's annual leave on October 4. Inspector A.K. Melsom will relieve at Geraldton during Mr. Bowler's absence.

Mr. B.R. Saville had a week's holiday on the Goldfields from September 20 to 26.

The Supervising Inspector, Mr. J.E. Bramley, will leave Perth on October 11 for a tour of inspection of the Albany district generally, including both Brookes' and Wilson's Inlets.

Mr. B.K. Bowen of Head Office will commence two weeks' annual leave on October 25.

Mr. B.H. Boyd will commence duty as Assistant Inspector at Head Office on October 4.

Inspector J.C. Thair will proceed to Shark Bay on October 21 to take over the district. Inspector R.J. Baird will return to Perth and, after annual leave, assume control of the p.v. "Garbo".

PERSONAL PARS

During the month Dr. G.M. Dunnett, Research Officer of the Wildlife Survey Section of the C.S.I.R.O., called on the Superintendent and discussed aspects of his proposed work at Rottnest Island. Dr. Dunnett will for the time being be engaged on a population study of quokkas.

INCREASED ALLOWANCE

Administrative Instruction No. 93 received from the Public Service Commissioner sets out the rates of allowances to apply as from September 1, 1954.

Travelling and related allowances have been increased by 3/-d per day from 28/-d. to 31/-d.

The allowance for meals when overnight travel is not necessary has been increased from 6/-d to 7/6d.

The subsistence allowance for seagoing inspectors has not been altered as this allowance is not included in the general agreement between the Commissioner and the Civil Service Association. It is understood that a separate submission is being considered by the Commissioner.

DUCK BANDING

Technical Officer J. Traynor last month spent 12 days in districts as far north as Eradu, but

was unable to locate a suitable banding station. Twenty-five ducks were trapped and banded at Glengarry on the Greenough River and one bird which had previously been banded at Moora entered the trap. Enquiries and observations made in the Three Springs and Winchester areas led to the opinion that the poor winter had resulted in the early drying out of the smaller lakes and swamps. Mr. Traynor found that there were any number of birds on Yarra Yarra Lake, but owing to its extent trapping was impossible there.

Other inquiries indicated that ducks are still well scattered in the south and are not in any numbers at the Cape Riche, Wardering or Karrinyup banding stations. An encouraging report mentioned large numbers of duck at Lake Jasper south of Nannup, and observations by the Fauna Warden (Mr. F.A.L. Connell) during his wheatbelt inspections confirmed reports that Lake Mears (about 17 miles south of Quairading) should be successful as a banding station.

REMARKABLE RECOVERIES

A Little Crow

During September one of our most interesting band recoveries occurred when a band previously placed on a Little Crow was returned.

In order to ascertain which species of crow had been plaguing Kalgoorlie residents, Honorary Warden Paul Wood caught a bird and forwarded it to Perth by passenger train on June 1. It was identified as being an immature Little Crow (Corvus bennetti). A band was placed on the bird's leg by Technical Officer Traynor and it was released from the latter's home in North Perth on the evening of June 2. Mr. C.F. Brewster returned the band last month and informed us that he had recovered it from a crow on September 22 at a place 40 miles east of Narrogin between Harrismith and Tinkurra. As far as we are aware, this is the only crow to have been banded and the recovery of the band, besides being the first recorded movement of this species, also demonstrates the remarkable results which may be obtained by the use of banding techniques.

Giant Petrel

In recent years there has been considerable activity on the part of expeditions to the far south in banding Giant Petrels - a large seabird which is commonly seen off the Western Australian coast in the winter months. The bird is often called a Sooty Albatross because of its large size and dark colour. However, it can be easily distinguished from the true Sooty Albatross by its large pale-coloured beak, the beak in the Sooty Albatross being black.

Until the recent banding schemes, naturalists had no idea of the vast extent of the travels of these birds. The first example was of a bird which had been banded as a fledgeling by the Falkland Islands Dependencies' Survey in the South Orkney Islands off Graham Land south of South America, on March 20, 1948. It was caught by fishermen at Fremantle Harbour on July 10 the same year, the bird having made a lengthy circumpolar flight in less than four months. Since then, birds have been marked at Heard and Macquarie Islands by the expeditions of the Antarctic Division of the Department of External Affairs. One bird from Macquarie Island was picked up later at South Georgia and birds from Heard Island have been taken later off Durban, several in Western Australia, some in South Australia, others in New Zealand and others again off Chile and off the Argentine. Generally these birds have been shown to travel in a west to east direction in conformity with the direction of the prevailing winds and ocean currents. However, some birds have been shown to travel in other directions.

One of these has been recently reported in this State. On June 19 this year a Mr. Rennie, of Harvey, when fishing off the Bunbury jetty, caught a Giant Petrel which had a ring on it. Mr. Rennie copied out the number and set the bird free again. By a remarkable coincidence, the bird was caught again by Mr. Fullerton about a month later when fishing off Fremantle. This particular bird had been ringed at Macquarie Island in the autumn of this year.

WILD LIFE SHOWS

The annual exhibition by the Western Australian Naturalists Club and the Gould League of Bird Lovers in

the Perth Town Hall, and by the Australian Inland Mission at Kalgoorlie, again included displays by this Department with Inspector J.E. Munro in charge.

At the Perth Town Hall the Show was again well attended and, it is felt, served a particularly useful purpose in acquainting the public with the value of wild life, not only from the aesthetic, but also from the economic and scientific angles.

In addition to the many large entries that dominated the scene, there were exhibits displayed by one hundred or more small contributors.

The exhibition in the Kalgoorlie Town Hall from September 22 to 25 was reported to have been an even greater success than those of previous years. The marine and faunal specimens exhibited by the Department created great interest and the lecturettes delivered and general information made available by Inspector Munro were again highlights of the show.

WHAT IS THE USE OF SHAGS AND SEALS?

A report received from Cape Town says that the South African Division of Fisheries will shortly commence extensive research on the effect of predators on a fishery. The Director of the Division, Dr. J.M. Marchand, believes that the investigations will take a long time, and he cannot say when it will be possible for results to be released. The programme will seek to find the effect that seals, cormorants, shags and penguins have on a fishery, and particularly to discover the quantity of fish each eats each day. An attempt will also be made to ascertain whether the balance of nature will be upset if seals and birds are declared to be pests and large numbers subsequently destroyed. It is believed that birds are responsible for much of the phosphate and nitrate in the sea along the coast, and that if they are killed the fertility of the fishing grounds will most likely suffer.

The research has been initiated following an attempt in the South African Senate to have shags and seals exterminated.

A £50,000 DREAM COMES TRUE

The new £50,000 cold storage and distribution centre built by the Fremantle Fishermen's Co-operative Society, Ltd., was officially opened on September 10 by the Minister for Fisheries (Mr. Kelly).

Mr. Kelly described the new building as a most important milestone in the history of Western Australia's fisheries. He said it was the realisation of a dream which had seemed impossible, with their ^{BEFORE} traditional individualistic outlook, came together in ^{THE} a spirit of unity and co-operation. ^{FISHER-}
^{MEN}

He said fishermen throughout the State should back the venture, which would now enable, for the first time, all surpluses to be placed in cold storage. Mr. Kelly concluded by saying that the sum of £15,000 had been placed on the current year's estimates for dredging and deepening the fishing-boat harbour at Fremantle, which is adjacent to the new co-operative structure.

The secretary of the co-operative (Dr. J.S. Marian) said the new building meant that the public would in the future not have to complain about the quality of fish. It was the aim of his co-op, to place a high quality product on the market at a price that was fair to both the public and the fishermen. Its object was to promote greater consumption of fish.

Now that adequate space was assured, added Dr. Marian, the next step was, in conjunction with the co-operatives at Albany and Geraldton, to take fish into the remotest country areas and into every household.

LICENSES TO TAKE NETS THROUGH CLOSED WATERS

Regulation 26a gives discretionary power to an inspector to refuse a license to take a net through closed waters. However, this discretion must be exercised against an applicant only when there are good, sound reasons why the license should not be granted.

It is a general rule of law that when legis-

lation confers discretion on any person, the exercise of that discretion must be reasonable, that such discretion must not be exercised capriciously or vindictively. In other words, all applications for a closed water license must be looked at objectively, i.e., personal feelings must be set aside, and no person must be allowed to suffer from the exercise of discretion unless that person has acted in such a way as to warrant the withholding of a privilege, or right.

If, for instance, a fisherman lives inside closed waters, he obviously has to take his nets through closed waters to reach open waters. It would not be reasonable to refuse such a man a license merely because the inspector suspects he may fish in those closed waters, or merely because he has in the past been convicted of having fished in closed waters, or because good relations do not exist between the fisherman and the inspector. If, on the other hand, a licensee is convicted (not just suspected) of fishing in the closed waters over which his license entitles him to carry his nets, then he has proved himself to be untrustworthy, and in such circumstances the refusal of a license would probably be justified. On conviction for an offence of this nature, of course, any closed waters license he holds is automatically revoked.

ABROLHOS CRAYFISHERY

The Abrolhos crayfish season which opened on March 1 closed in mid-August with a total catch of 2,119,400 lb. of crayfish. The statistics of this catch, together with statistics of the three previous years, are set out in the table on page 329. The most notable feature of the table is the total take of crayfish for the season just concluded. The only other years in which a catch bettering 2,000,000 lb. was recorded were 1949 and 1950.

In the years preceding 1949 the Abrolhos crayfish industry was experiencing a period of expansion and exploration, with an increasing number of men visiting the Islands each year. In 1949 there was an average of 73 men who took just over 2,000,000 lb. of crayfish. Repercussions from this extremely high catch

manifested themselves in two directions. Firstly, the lure of easy money attracted a further 41 fishermen to the Islands in the following year and, secondly, the fishermen in 1949 had apparently removed the "accumulated stocks" from the grounds. In 1950, although the catch was approximately the same as in the previous year, the catch per man declined from 26,000 lb. to 18,500 lb. In the years prior to 1949 the average catch per man approximated 25,000 lb., while in the years following 1950 the average catch remained around the 18,500 lb. mark. Statistically it would appear that the industry had passed through a transitional period in 1950, when a high percentage of the accumulated stocks had been caught and fishermen were forced to rely on the yearly recruitment of young crayfish for their catch. From 1951 to 1953 approximately 90 crayfishermen operated at the Islands with a seasonal catch of about 1.6 million lb. of crayfish.

This year the catch again soared to the 2 million lb. mark. This rapid increase could be due to the accumulated effect of a number of factors. For example, this year crayfishermen were not allowed to fish in Geraldton onshore areas if they had operated earlier, during the cream of the season, at the Abrolhos. Consequently, most of the fishermen stayed at the Islands longer than in previous years, which meant a consequential increase in catch. Extremely good fishing weather experienced in the early part of the season, which allowed fishermen to consistently exploit areas unworkable by reason of indifferent weather in previous years, most certainly had some effect in giving buoyancy to the catch.

Let us now examine the catches of the various groups which together form the Abrolhos. In 1951 the catch per man at the Easter group was far ahead of either the Wallabi or Pelsart groups, and thus in the following year the number of men operating in the Easter group increased. This brought about a reduction in the catch per man in the Easter group and an increase in catch per man in the other two groups. In 1953 much the same situation existed. Fishing intensity was again stepped up in the Easter and Wallabi groups. The catch per man accordingly fell in these areas, although in the Wallabi group the effect was not so marked. The Pelsart group, which was intensively fished in 1951, appeared to regain some

ABROLHOS CRAYFISHERY

GROUP	1951 SEASON			1952 SEASON			1953 SEASON			1954 SEASON		
	Total	Catch per man	No. of men	Total	Catch per man	No. of men	Total	Catch per man	No. of men	Total	Catch per man	No. of men
	lb.	lb.		lb.	lb.		lb.	lb.		lb.	lb.	
North Is.	116,206	16,601	7	132,437	16,555	8	123,243	17,606	7	208,972	13,931	15
Wallabi	483,834	16,684	29	441,684	22,084	20	573,081	22,041	26	679,783	18,883	36
Easter	545,565	22,732	24	579,773	18,118	32	647,967	16,199	40	814,848	19,784	41
Pelsart	502,219	14,771	34	395,556	16,481	24	294,020	17,294	17	415,797	19,800	21
TOTALS . .	1,647,824	17,530	94	1,549,450	18,446	84	1,638,311	18,203	90	2,119,400	18,756	113

stability as the number of men again decreased.

This year the Wallabi group was required to support an additional 10 fishermen, and the catch per man dropped as a result. However, both the Easter and Pelsart groups experienced a substantial increase in the catch per man, despite a small increase in the number of men operating. This increase was no doubt due to the factors mentioned earlier, i.e., the prohibition of fishermen working both at the Abrolhos and in the Geraldton onshore region during the Abrolhos open season, and the excellent weather conditions, as well as to the beneficial cumulative effect of the rather long close season.

Although these increases are refreshing, it must be borne in mind that the overall catch per man is still largely in line with the figures for the four preceding years. Coupled with the factors already set forth, any environmental change for the better - however slight - any increase in man-hours, or any improvement in fishing techniques, would tend to bring about an overall increase in catch. There is still no room for complacency on our part, and we must continue to watch the situation very carefully.

A particularly pleasing feature of this year's operations was the smaller percentages of "midget" tails packed. This could possibly have been due to environmental factors which increased the availability of food, thus causing greater growth rate, although if the cause was greater availability of food alone, the increase in growth rate should have been manifest in all size-groups. This was not the case.

Financially the fishermen have done remarkably well. The price they received this year was 1s.11d per lb. live weight. The fisherman therefore earned on the average £1835 for the 24-week season. The value of the catch in terms of tails exported to U.S.A. was approximately \$ 750,000.

PARLIAMENTARY QUESTION

The overpage extract from "Hansard" relates to questions asked in Parliament and answered by the Minister for Fisheries.

September 14, 1954.

"CRAYFISH

As to Diminution of Number and Fresh Areas

Hon. D. BRAND asked the Minister for Fisheries:

(1). Is there any truth in the suggestion that the number of crayfish is diminishing in areas centred on the Abrolhos Islands?

(2) If so, to what extent?

(3) As large numbers of crayfish are believed to exist south of Geraldton, has consideration been given to opening up this area?

(4) Has Snag Island or any other been set aside as a possible depot?

(5) Has Port Denison been given any consideration as a point of unloading the crayfish if southern seas are opened to crayfishing?

The MINISTER replied:

(1) Present indications are that the population numbers remain unaffected. Continued research on this subject is in progress.

(2) Answered by No. (1).

(3) Yes. Professional fishermen have already operated on crayfish in the waters south of Geraldton. During 1953, in the area south from Geraldton to the northern boundary of the closed waters between Knobby Head and the mouth of the Hill River, 328,756 lb. of crayfish was taken. Three vessels from Geraldton produced 63,205 lb. and four "freezer" boats from Fremantle produced the balance of 265,551 lb. In the same area up to the 30th June, 1954, five Geraldton-based fishing boats caught 32,000 lb. of crayfish. No Fremantle boats worked in the area this year. From the 1st January, 1954, to the 31st July, 1954, when the waters between Knobby Head and the Hill River were open, no Geraldton boats operated in the area north of the 30th parallel.

(4) No.

(5) No approach has been made to the Fisheries Department since 1951, when it was considered that provision of a safe anchorage for additional vessels from Geraldton would entail a major harbour project."

BLESSING OF FREMANTLE FLEET

Nearly 20,000 people lined Fremantle streets, the foreshore and the Fishmarket Jetty on Sunday, September 12, to see the Roman Catholic Auxiliary Bishop of Perth (Dr. L.J. Goody) bless the gaily-decorated fishing fleet.

Probably because it is Marian year the crowd was the biggest ever. A procession 1,000 strong bore a statue of the Virgin Mary through the city streets to the jetty.

Members of the committee of the feast - it was a feast day - carried the statue to the new Fishermen's Co-operative building, which was opened the week before.

Bishop Goody blessed the building and then members of the crew of the fishing vessel Maddelena, which was elected to lead the fleet, bore the statue to their boat. On the Virgin's head was the gold crown bought by the Maddelena's crew.

From the boat Bishop Goody blessed the fleet and then about 12 flag-bedecked boats - one of them bearing the Perth City Band - followed the Maddelena on a circuit of the fishing grounds. With Bishop Goody on the boat was the Queen of the Fleet, 21-year-old Francesca Scaffidi, who was elected at a dance on Saturday night.

TROUT DISTRIBUTION

This month Technical Officer J.S. Simpson will be distributing trout fingerlings to country centres. The Serpentine-Jarrahdale Trout Acclimatisation Society has ordered 30,000 and of these 20,000 will be

delivered to Beverley and 10,000 to Serpentine. A further 13,000 have been ordered for delivery to Wickepin, Kondinin, Lake Grace, Corrigin, Ardath and Quairading.

ELEMENTARY NAVIGATION

(This is the first of a series of articles by Supervising Inspector J.E. Bramley. In this issue Mr. Bramley deals with magnetic compasses and factors which may cause magnetic irregularities.)

Recently I noticed a report where one of our patrol vessels prior to arriving at her Island destination found she was 13° off course. The inspector submitting this report stated that in his opinion the vessel's compass was most unreliable.

This was a statement which I felt should not have been made by an officer who should have had a good knowledge of elementary navigation. He should have known that magnetic compasses are always unreliable. It is for that reason that navigators are constantly checking their compasses for error, and it is only when the error is known that they can make a good course.

I thought it may be useful to all inspectors, but more particularly to sea-going inspectors, if I gave a few hints on elementary navigation, and the vagaries of the magnetic compass. Before doing so, it might perhaps be better to start from the beginning and explain something about the magnetic fields which not only make a compass work but also throw it out.

Many years ago it was known that a mineral called a lodestone always pointed roughly north and south when suspended. It was later found that iron and steel were attracted to the ends of the lodestone, which was a natural magnet, as are the majority of iron ores. These ores are one of the contributory factors to irregularities in the functioning of the magnetic compass.

Artificial magnets, from which compasses are made, consist of certain steels containing a small

percentage of tungsten or cobalt or some other suitable alloy. Steel is harder to magnetise than iron, but it loses its magnetism much less quickly than iron. Either may be magnetised by merely rubbing on a magnet, by hammering them in a magnetic field, or by means of electricity. Artificial magnets have the same properties as natural magnets, i.e., they point approximately north and south when suspended.

Each magnet has two poles - the north (or north-seeking) pole and the south (or south-seeking) pole. The north pole of a magnet for convenience is normally colored red and the south pole blue. If the north pole of a magnet is brought close to the north pole of a compass needle, the latter is repelled, but if the north pole of the magnet is placed close to the south pole of the needle it is immediately attracted. This is the fundamental law of magnetism - like poles repel; unlike poles attract.

It has been found that a magnet will induce magnetism in any steel or iron placed within a certain distance of it. This is known as the magnetic field of the magnet, and the process is called induction. A ship placed in a magnetic field will also be subject to induction. In other words, it becomes a magnet. Up to a certain point heating will increase the magnetic properties of iron or steel, but beyond that point the degree of magnetism decreases rapidly until finally they become non-magnetic. Furthermore, vibration causes fluctuations in magnetism. It is well to remember these points, so that variations in magnetism in ships, which will be discussed later, will be more easily understood.

LOSS OF THE DOREEN

Inspector S.W. Bowler, of Geraldton, has reported that licensed fishing boat No. G.119 was wrecked near Point Moore, Geraldton, about 7 a.m. on September 21.

The Doreen was a 31', 3-ton vessel, fitted with a diesel motor, owned and operated by J. Rollands of Geraldton.

At the time of the mishap Mr. Rollands was

on his way to the African Reef and ran aground on the spot known locally as "Hell's Gates". The boat was badly holed and broke up during the evening, before it was possible to salvage any gear.

MARINE POLLUTION

Advice has been received that the Government has set up a Committee to advise what measures should be taken to combat pollution of seas, beaches, rivers and ports.

Mr. F.W.E. Tydeman, General Manager of the Fremantle Harbour Trust, has been appointed Chairman, and the undermentioned as members -

Mr. J.E. Parker, Deputy Director of Works;
Mr. K.G. Forsyth, Manager Harbour and Lights
Department;
Mr. W.P. Cass Smith, Department of
Agriculture;
Mr. A.J. Fraser, Superintendent of Fisheries;

The Secretary of the Committee is Mr. H.C. Rudderham, of the Fremantle Harbour Trust.

The inaugural meeting of the Committee was held at the Board Room of the Fremantle Harbour Trust at 3 p.m. on September 30.

The Chairman informed the meeting that he would shortly be attending a meeting of the Australian Port Authorities Association at which a report on the decisions recently reached overseas would be made.

(vide Vol. III No. 6, June 1954 issue of this
Bulletin.)

SPERM WHALES

The Commonwealth Director of Fisheries (Mr. F.F. Anderson) advised during the month that permission had been granted for the Cheyne Beach Whaling Company to prospect for sperm whales. To this the Department has agreed.

Sperm oil has been for many years a valued product of the sperm whale, which so far has not been synthesised owing to its chemical makeup. It is unique among oils in that it contains fatty alcohols which make it suitable for particular uses. There is a good demand for it in the leather and fur trades and also in the textile industry for finishing cotton and rayon thread. Because of its penetrating powers and rust preventive properties it is widely used in industry. Milady must thank sperm oil for the lustre in her high quality shampoos.

Spermaceti, another product from the head of the sperm whale, is used in the preparation of cosmetics, shaving and cold creams, ointments and pill coatings.

1954 WHALING SEASON

The table on page 337 sets out the whaling statistics for the 1954 season. Although the three stations did not commence operations till some time after the season officially opened on May 1, full quotas were taken for the second year in succession.

The bulk of the whale oil output was "sold forward" to Holland and Germany at a price of approximately £A100 per ton. This figure is slightly higher than last year's value of £A94 per ton. Unlike previous years, when irregular visits by tankers to take away the oil created many difficulties, this year oil loading operations went forward without undue delay.

By-products were again sold on a ready market. Whale meal, which is used as a stock food, commanded a price of about £A48 a ton, while solubles, which are also used as stock food, sold at £A65 a ton. The solubles, which were dried this year for the first time, contain an extremely high percentage of protein. It is interesting to note that a market has now been found for baleen, which for some time has been a drug on the market. Many years ago, it was in great demand for use as "whale-bone" in certain women's garments.

STATION	WHALES TAKEN				AVERAGE LENGTH		P R O D U C T I O N							
	Males	Fe- males	Sex X Unknown	Total	Males	Fe- males	O i l (in barrels)			Baleen bales	Meal tons	"Pet meat" tans	Solu- bles tans	Ferti- liser tons
							Total	Per whale	Per Whale- foot					
Point Cloates (Nor'West Whaling Co.,)	271	318	11	600	38.9	40.2	28,200	47	1.19	337	1,325	-	-	-
Carnarvon (Australian Whaling Commission)	351	249	-	600	38.5	40.6	28,612	47.7	1.21	-	1,682	-	1,425	-
Albany (Cheynes Beach Whaling Co.,)	68	52	-	120	39.4	41.4	6,143	51.2	1.27	-	53	180	-	72
TOTALS	690	619	11	1,320	38.8	40.5	62,955	47.7	1.21	337	3,060	180	1,425	72

X Only portion of whales recovered - remainder eaten by sharks.

This year the average length of each whale was slightly less than last year. This partly explains the fact that the tonnage of oil taken was slightly less than last year's take. It is also reflected in the output of oil per whale. In 1952 the average was 8.7 tons of oil, in 1953 8.5 tons, while this year the average dropped to 7.9 tons.

Economically the season has again been very successful. Taking into account the sales of oil and the by-products associated with its production, the approximate value of each whale caught is about £A975. The industry is therefore worth something like £A1,287,000 annually to this State.

The plate comparing the 1953 and 1954 catches of the Cheynes Beach Whaling Company has been reproduced from the original diagram compiled by Inspector G.C. Jeffery.

It graphically presents the shift of the take this season when 36 whales were taken in June compared with 24 in June, 1953, representing an increase of 150 per cent for the month. The July catch was 53 whales in 1953 and, coincidentally, 54 in 1954. The same rate of improvement on 1953 figures was achieved in August as in June, the August figures being 23 in 22 days last year and 30 in 20 days this year.

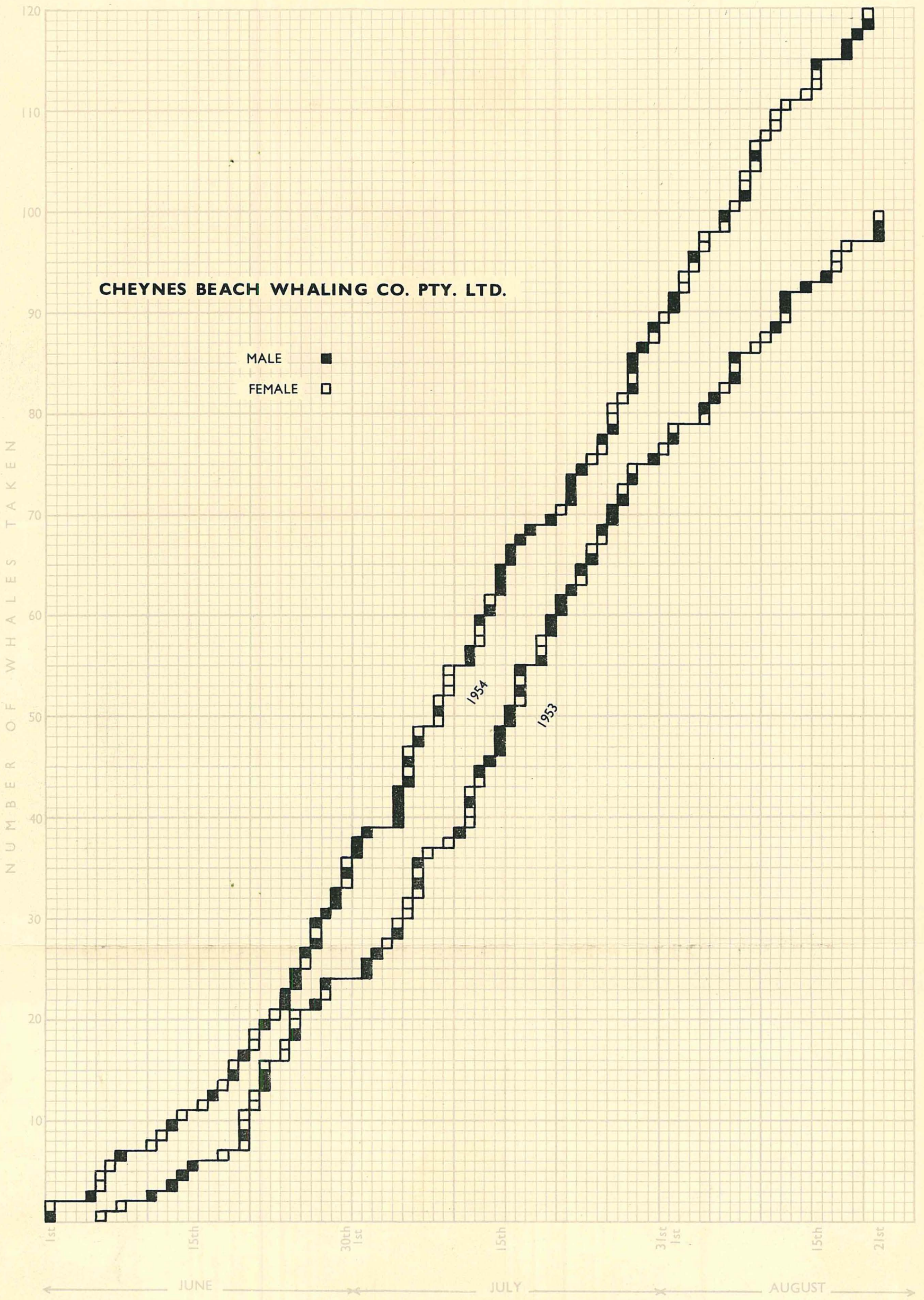
NEW ZEALAND LICENSE RESTRICTION

A report comes from New Zealand that the Government's Marine Department has adopted a system for restricting crayfishing licenses similar to that existing in this State. The policy now adopted is that of not renewing commercial crayfish licenses to those who take up fishing on a commercial scale only during the crayfish season.

It will be remembered that New Zealand's crayfishery has recently enjoyed a boom perhaps best illustrated by the increase of their exports to America. In 1952 1,908,132 lb. of cray tails were exported and in 1953 this figure increased to 3,080,335 lb. The number of part-time fishermen had increased apparently to such a proportion that it was considered a threat to the future of the industry.

CHEYNES BEACH WHALING CO. PTY. LTD.

MALE ■
FEMALE □



THE CLEARING HOUSE

Fish Meal Has Become Big Business

Turns Waste Into Cash and Enriches the Farmers

By Chas Ekberg

One of fishing's most important ancillary industries is the production of white fish meal. Fish meal manufacture binds fishing inextricably with agriculture as it is used extensively in animal and poultry feeding, and it also ensures that nothing is wasted on the production side of fishing. All the offal and unsold fish from our fishing ports goes to the fish meal factories and gives good financial returns to both owners and merchants.

Many years ago fish caught in the Humber were used by local farmers to fertilise their land and that is how the idea of fish meal was really created. It was in the 1860's when the first crude processing systems began to produce fish manures but the increase in live-stock in the country coupled with knowledge soon created a bigger demand for the meal which was rich in animal protein.

It must be stressed that in those far off days much the biggest use of fish meal was as a fertiliser until in 1892 a number of experiments with it as an ingredient of animal food were carried out in Norway.

Value Discovered

These experiments were eminently successful and the manufacturers in this country found that what they were selling as fertiliser was being re-sold as feeding stuff. In 1916, however, the Association of Fish Meal Manufacturers was formed with the idea of advertising fish meal as a home-produced animal food of great value to agriculture.

Protein Rich

It was established by scientists that if the

meal was manufactured entirely from the heads, bones and flesh of white fish no taint was produced in pork, bacon, milk, eggs or poultry, and that supplemented by grains, grain offals and potatoes, it became a food high in protein content. It was also found that in the case of other meals any taint in animal flesh could be avoided by feeding none for a few weeks before slaughter.

The popularity of fish meal in animal feeding increased so rapidly that by the outbreak of the war in 1939 there was an annual output of 72,000 tons. Now, in 1954, the total production is consumed in this country and the demand far exceeds the supply.

The introduction of filleting at the ports and increased landings were big factors in influencing the growth of fish meal manufacture. Filleting meant offal in large quantities readily available to hand; so bigger factories and more modern plants began to grow up, usually very close to the various docks.

The actual manufacture of fish meal takes about six hours. First the fish or offal is vacuum sterilised and cooked. It is then passed through drying tubes into grinders, riddled, bagged and weighed prior to distribution. This is a very simple description of what goes on, for in actual fact fish meal manufacture is a highly skilled operation.

Though thousands of tons of meal are produced daily in Great Britain, it is important to remember that manufacture is dependent on factors not present in most industries. For example, some weeks the plants are working at top speed when there are gluts of fish and consequently big supplies of offal. Then personnel may be coasting for days when supplies are small and there is little offal.

By-Product Only!

Iceland recently tried to get over these factors by fishing specially and specifically for meal. They had the advantage of being right on the fishing grounds but the experiment proved a costly one.

High running costs coupled with the small price brought by white fish for meal would make fishing for the factories an impossibility in this country.

("The Fishing News", London, 6th August, 1954.)

Most Fish Can "Talk" With a Purpose

American undersea research workers say that a study of sounds made by 60 fishes shows that only six produced no sounds, according to the Fishing Gazette, a U.S. fish trades journal, which says the study proved that fish make sound voluntarily and with a purpose. It may be used as a means of communication, particularly in breeding, an expression of fright, for defensive or offensive purposes, as a response to changes in the surroundings, or for no apparent purpose.

Twenty-seven of the fish studied produced sound either by means of an air bladder which produces low pitched guttural drum-like sounds or by friction of one part of the body against another.

"A characteristic sound for a striped bass, for instance, is a single deep-pitched thump, while a seahorse makes a loud click similar to the snapping of the finger against the thumb. A common eel makes a dull thud or thump and a low clucking sound resembling the "put-put" of an outboard motor."

For the study the fishes were held captive in wire enclosures in open water and in laboratory aquaria, subjected to carefully controlled situations and stimulation, and were monitored with a hydrophone and a sound recorder.

The so-called "silent underseas" would seem to need renaming "noisy."

("The Fishing News", London. August 6, 1954.)

New Nation to Feed Every Two Years?

The population of the world is now increasing so rapidly that every two years there is a gain which is the equivalent to the rise of a new nation greater numerically than the United Kingdom. And these people have to be fed. Can the world keep on doing it? Where is the food coming from?

These questions, directly affecting the fishing industry as a prime source of human food, are to be

discussed by the Institute of Biology at a two day symposium (September 24 and 25) on the premises of the Royal Geographical Society, London. Some 14 scientists and professors are to contribute studies at the four major sessions - two each day.

("The Fishing News", London. August 6, 1954.)

Trout served in U.S. restaurants must have the fish's birthplace clearly marked on the menu, under a Bill just passed by the American Senate. This follows complaints that foreign trout are being sold as American. Penalty for a first offence will be a year in prison and a fine of £A500. Caterers and their suppliers are wondering how long it will be before birth certificates too will be demanded by the legislature!

("The Fishing New", London. August 13, 1954.)

China Heads the World's Fishing Potential

China is much in the news at the moment so it is interesting to recall the extent of her interest in fishing. Her maritime interests have been extensive for many centuries and her sailors have been described by knowledgeable people as the "best in the world".

Here are some facts about the extent of her fishing resources. She has over 436,000 square miles of good fishing grounds in the East China Seas, the Yellow Sea, Phai Bay and the South China Seas. This represents about one quarter of the world's known good grounds.

While exact figures are not known it has been estimated that her annual catch could reach at least 4,500,000 tons. For purposes of comparison Britain's wet fish landings are just under 1,000,000 tons.

The inland waters, too, are productive and could yield about 1,500,000 tons.

Along China's coast of more than 6,835 miles, the intermingling of cold and warm currents provides the requisite temperature for a wide range of fishes. China also possesses a multitude of lakes and ponds, covering nearly 50,000,000 acres, suitable for fresh water fishing.

("The Fishing News", London. August 27, 1954.)

Canada Fights the Lamprey

Work has begun in the Canadian section of the Upper Great Lakes to protect and expand fish stocks. The Canadian Federal Government and the Ontario provincial government has formed the Great Lakes Fisheries Research Committee to co-ordinate and expand fishery research. First operation is a campaign against the lamprey pest. This eel-like scaleless fish is believed to be responsible for the collapse of the commercially important lake trout stocks in Lake Huron and Lake Michigan and it is feared that a similar fate awaits the stocks on Lake Superior says Trade News, journal of the Department of Fisheries at Ottawa.

"Observers point out that complete collapse of a fishery through lamprey attacks can come about in a few years," says the paper. "During the parasitic phase of its life the lamprey feeds on the blood and body juices of fish. It attaches itself to its victim by means of its sucker-like mouth and with its sharp teeth rasps the body."

Lamprey barriers are to be erected across streams running into Lake Superior, and it is expected that 20 major lamprey control installations will be completed this year. Three electric barriers are now in operation, and lamprey will be collected at these barriers, tagged and released to assist in a study of lamprey habits and stream conditions.

Attempts are being made to poison the lampreys, the poison being placed in the water near the mouths of rivers. Commercial fish in the Lakes will not be seriously affected as the poison disperses soon after it has been applied.

Another part of the committee's research programme is the planting of 3 million lake trout eggs in the Upper Great Lakes. The eggs will first be flown to hatcheries, and planted after they have reached the yearling state. Work in Lake Erie will include tagging and an analysis of commercial catches to provide data for population estimates and movements of fish.

("The Fishing News", London. August 13, 1954.)

U.S.A. Means to Protect its Fishermen

High seas fisheries protection Bills introduced in the U.S. House of Representatives, and backed by the National Fisheries Institute, provide for a clear statement by the U.S. of where fishermen may legally operate on the high seas under U.S. protection against interference by other nations.

Fishermen whose vessels may be seized by a foreign nation while in what the U.S. considers to be the high seas, would be indemnified by the U.S. for any losses resulting from such a seizure.

The high seas are defined as an area of ocean outside the 3-mile territorial waters belt measured from low water mark. Exceptions include cases of treaties, U.S. policy regarding bays, etc., and where a nation operates an "abstention principle" in protecting any of its fisheries in the high seas.

A U.S. fishing vessel would not receive protection of the Act if it engaged itself in fishing operations on a stock of fish which has been fully developed, investigated and conserved by a nation or group of nations. This asserts a sound principle, says the National Fisherman (journal of the commercial fishing industry of the U.S.), which adds, "The Act, in effect, recognises the right of a nation to compel abstention by others in fisheries meeting the test set forth."

("The Fishing News", London. August 6, 1954.)

He Acted Rashly !!

A Reuter message from Le Havre states that Robert Boulestin, 45, arrested for stealing 384 tins of lobster and 195 of salmon from a warehouse a fortnight ago, was taken to hospital suffering from a severe rash.

Police said that, being unable to sell the tins, he had eaten the lot.

("The Fishing News", London. August 27, 1954.)

The Sardine Story - A Tragedy

LOSS OF CALIFORNIA'S SARDINE FISHERY
MAY BECOME PERMANENT

By: Richard S. Croker, Chief, Marine Fisheries Branch,
Department of Fish and Game

Gone, perhaps forever, from the Bay of Monterey are the midnight lights of the fishing fleet. No longer do the proud white seiners pass under the Golden Gate Bridge, decks awash and holds crammed with sardines. Instead of estimating the thousands of tons in each daily catch, waterfront San Pedro counts the days between catches.

Missing from the Nation's store shelves are the millions of cans of sardines. Oil for paint and vitamin-rich protein meal for cattle and poultry are gone.

Whether one thinks of the romantic sound of mighty diesels carried on the sea breezes or more prosaically of the hard silver dollars - millions of them every year that the little silvery fish produced, one must face the sad fact that a great and picturesque fishery has died before our eyes. Thousands have lost their livelihood with the vanishing sardine which is now too scarce even to provide bait for anglers.

What has caused this catastrophe? Could it have been prevented? Will the sardines return, and can we help them?

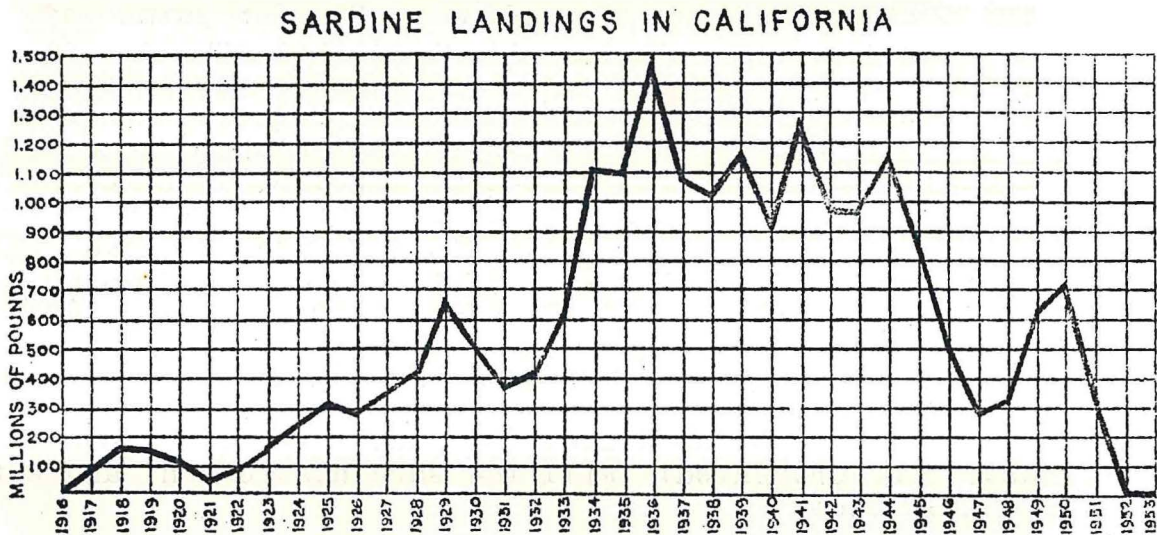
The answers to these questions are complex but we have them.

The causes of scarcity can be summarised as too much fishing and not enough reproduction.

The sardine industry sprang up during the first world war and reached a level during the succeeding decade or so which produced reasonable quantities of food and provided a reasonable living for fishermen and

plant operators. Then with the development of reduction plants for meal and oil, catches sky-rocketed. New and bigger plants were built, many new large boats joined the fleet. Everyone made money hand over fist as the ever-growing harvest of silver sardines flowed into the plants to be transformed into dollars.

As the industry expanded into the Northwest, annual landings reached three-fourths of a million tons, or a billion and a half pounds. To the industry, the fish seemed inexhaustible, and new plants and boats were built despite the solemn warnings of our scientists that the house of cards would soon come tumbling down.



No fish could withstand this sort of exploitation for long. A fleet of 300 vessels, each able to take from 100 to 200 tons a day, was capable of decimating any kind of fish.

Gradually the signs of depletion were evident. The older and larger fish were caught off and the fishermen had to take the younger ones. Each boat caught less fish for its night of fishing, but greater numbers of boats sustained the total catch for awhile. And rising prices maintained fishermen's incomes. Scarcity was masked.

At the same time that the nets were taking their toll, nature conspired to hasten the end by failing to provide good oceanic conditions for spawning and the survival of young fish. Sardine spawning success has always fluctuated widely and in some years few young fish were produced. However, there were always enough older fish to fill the boats, and occasional poor spawnings went unnoticed by the industry. Then in the last several seasons came a series of years when few baby sardines survived. The non-production of young fish, coupled with the killing off of the oldest fish, resulted in a severe curtailment of abundance.

Good Hatch Questionable

Now scarcity has proceeded so far that even if oceanic conditions should become favorable, we fear that insufficient spawning sardines remain to take advantage of them to produce a good hatch.

The disappearance of the sardine was not a sudden thing - it has been progressive. The danger signs were there years ago but all warnings went unheeded. It is no pleasure to say, "We told you so." The sad part of this story of a failing industry is that it could have been prevented.

When the first signs of failure appeared, over 15 years ago, we warned the industry. Total catches were still rising and fortunes were still being made.

So, who cared that the average size of the fish was diminishing, that each fisherman's catch per night's fishing was declining? The scoffers had their day and built new reduction plants and canneries.

The fishery off Canada failed first. Only the largest sized fish migrate north and when the big fish were caught, they couldn't migrate. Then Oregon and Washington lost their industry. But the fishermen thought it was a temporary shortage due to a change in the currents.

San Francisco Collapse

Next came the collapse of the fabulously rich San Francisco fishery. After a few flurries, Monterey faded into history. Fair spawnings in 1947 and 1948 postponed the end and prolonged the death throes.

By 1950 the central California fishermen and plant operators in their desperation called for help. At last they realised that this was no temporary shortage. The department's recommendations for a management program finally fell on ears not entirely deaf.

But still the sardines appeared to thrive in Southern California waters. Being closest to the offshore spawning areas and where the adolescent fish have always occurred, the southern grounds continued to produce. When the 1947 and 1948 fish reached catchable size - or somewhat less - they were pounced upon by the entire West Coast fleet which had concentrated in southern waters. Few fish survived to migrate north. Few fish survived to spawn. Few fish survived.

The optimistic fishermen heralded the upsurge as the start of a returning abundance. Now, they thought, the fish have come back like we always said. This has been just the low point on a natural cycle and here we go again on that silver rocket to the moon.

But it was not to be. After two fair years, the next season was a failure. And since then gloom has really settled on the waterfronts. In the last two years there have not been enough sardines to supply all the bait needs of the sportsmen, let alone to fill the empty cans in the warehouses.

Our research people, by measuring the fish and measuring the catches, checking the migrations and surveying the spawning beds, and by performing intricate calculations, had determined that the supply of fish could support a fishery only half as great as the landings of the booming 30's and early 40's. Through the department they stated and reiterated that unrestricted fishing would result only in self-destruction of a great industry.

They pointed out that restrictions on nets, closed areas, processing limitations and closed seasons, even had they been more severe, would still be nothing but panaceas giving lip service to conservation.

Curtailment Needed

Nothing short of a direct curtailment of fishing - which would result in less production - could preserve the fishery. The calculations indicated that although the supply could not withstand a 700,000 ton catch indefinitely, it could maintain half that amount year after year. The recommendations aroused laughter but no interest.

As catches plummeted, the researchers calculated that the reduced sardine population could no longer maintain a 300,000 ton production. They recommended a seasonal bag limit of what then sounded like a ridiculously low figure. Who could guess that a year's total catch would soon be a mere 5,000 tons, including bait?

While fishing continued recklessly, each successive calculation showed a lower safe annual limit that should be set.

It can be stated without fear of contradiction that had landings been limited to 300,000 tons a year in the early 1940's, there would be no sardine crisis now. Had a limit of 200,000 tons a year been established as late as 1947, there would not be 75 idle processing plants rusting away nor over a 100 purse seine boats for sale at any price. But no one could believe that the ugly word "overfishing" was the cause and no one wanted any regulation or restriction of their "right" to fish.

Committees were appointed and deliberated. Some saw merit in our proposals for a managed fishery. Some didn't. All quarreled over details while agreeing that conservation was a good idea.

Research Program

Realising that something was causing the sardines to make themselves unavailable, even if it wasn't fishing, level-headed leaders in the industry asked for additional research which they hoped would

throw light on the disappearance. They asked the Legislature for special added taxes on themselves to finance research, and as a result the Marine Research Committee was formed. They requested larger appropriations for the University of California for research. Sea-going surveys are expensive. The agencies, financed in part by this new tax, and using also their own funds, have banded together under the Marine Research Committee. They are the Department of Fish and Game, the University of California, Stanford University, U.S. Fish and Wildlife Service, and the California Academy of Sciences. Their program is called the California Co-operative Oceanic Fisheries Investigation.

Important results have been produced by this greatest of all fishery research programs, but it will be years before the final story is told. In the meantime, the fish have gone from all our coast and only in Mexico can they be found in anything approaching their former numbers.

Is It Too Late?

Something drastic must be done, and soon. It may be too late but we must try. An advisory committee established late in 1951 and composed of the leaders of the industry, sportmen's groups, Legislature and department labored long and earnestly to develop a conservation plan. In spite of everything, a workable program was laid before the Legislature in 1953. Bickering and disagreement over details caused its defeat. Fishing continues unrestricted and every sardine that shows a fin is captured forthwith.

Now, only complete cessation of fishing for a few years, followed by rigid control of fishing intensity for many years can hope to revive the sardine fishery. The few remaining fish must be given a chance to reproduce.

In recognition of the plight of the fishery, the Fish and Game Commission adopted a resolution last November that sums the situation accurately. It reads:

WHEREAS, It appears to the Fish and Game Commission that the sardine industry of California is in a state of collapse because of a continuing scarcity

of fish to the point where there is insufficient supply for either processing or bait; and

WHEREAS, There are no indications of a return to abundance in the foreseeable future; and

WHEREAS, Present statutory controls are inadequate to insure a recovery of the fishery, and only strict regulation of catches adjusted to meet changes in the amount of the supply offers any hope for the future of this important industry now, therefore, be it

Resolved, That the Fish and Game Commission respectfully requests the Governor of the State of California to call an extraordinary session of the Legislature to be concurrent with the 1954 Regular Budget Session to consider enactment of a statute conferring upon the Fish and Game Commission the authority to regulate the taking of sardines for all purposes, consistent with the principle of maximum sustained yield.

So, once again we shall try to save an industry with the support of those in the industry who wish to remain in business and the sport fishermen who see the sardine as a feed fish for the game species and as bait.

Perhaps we shall succeed. If so, once more thousands of fisherfolk will pursue their chosen vocations. Once more we will find canned sardines on the grocer's shelf. Once more the stately white ships will ride into port hull down with fish - leaving behind other ship's running lights twinkling endlessly to the shoals of silvery fish waiting to be caught.

("Outdoor California". Sacramento. January, 1954)

Drying Fish by Infra-Red Lamps

A Japanese experimental station has been drying fish with batteries of infra-red lamps at 40 to 45 degrees C. The drying takes two hours and can be accelerated by circulation of air, and the finished product is claimed to be free from odours.

("The Fishing News". London. September 3, 1954.)

Fishing Limits

Before U.N. Assembly - World Issues Involved

The United Nations General Assembly will be asked to thrash out the problems of national rights over continental shelves and high seas fishing this autumn, says a Washington dispatch in the New York Times.

The matter will be raised by Britain, the U.S., Brazil, the Netherlands, New Zealand, Liberia and Nationalist China, it says, and opposition is expected from Peru, Chile, Ecuador, Argentina, Iceland and the Philippines.

The contention of some countries that their regime extends beyond the three-mile limit at sea will be challenged.

Britain and the U.S. are said to be particularly concerned with protecting the rights of their fishermen.

British fishermen have been excluded from Icelandic waters by a "bays line," including Icelandic bays within territorial waters, says the dispatch.

America is concerned for her fleet, which makes 90 per cent of its catch off the eastern coast of South America. While U.S.A. claims that only a three-mile limit is enforceable, Peru, Chile and Ecuador claim control over 200 miles from their coast.

The continental shelf issue involves the question of whether nations may control not only the seabed of the shelf along their coasts, but also the water above the seabed, the dispatch added.

A continental shelf, under international law, is considered to extend from the coast to a depth of 100 fathoms, or 600 feet. It could vary widely in surface mileage.

Argentina, for instance, claims control of waters and fishing rights, above a continental shelf extending 200 miles to sea. America's view is that Argentina's rights extend only to the seabed, for such purposes as drilling for oil.

("The Fishing News", London. September 10, 1954.)